

Appl. No. 10/628,893
Examiner: FOURSON III, GEORGE R, Art Unit 2823
In response to the Office Action dated May 4, 2005

Date: August 4, 2005
Attorney Docket No. 10112521

REMARKS

Applicant thanks the Examiner for acknowledging Applicant's claim to foreign priority and receipt of the certified copy of the priority document. Responsive to the Office Action mailed on May 4, 2005 in the above-referenced application, Applicant respectfully requests amendment of the above-identified application in the manner identified above and that the patent be granted in view of the arguments presented. No new matter has been added by this amendment.

Present Status of Application

Claims 1-7 stand rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Henley et al (US 2002/0106870), Bachrach et al (US 2004/0142542), and Murphy et al (US 2004/0056332).

In this paper, claim 1 is amended to exclude the use of a laser in the chemical bonding. In addition, claim 1 is amended to recite a hydro-cracking reaction being performed in-situ with the chemical bonding. Support for the amendment can be found on page 5, lines 22-30, and page 6, lines 1-6 of the application. Claim 4 is canceled. Thus, on entry of this amendment, claims 1-3 and 5-7 remain in the application.

Reconsideration of this application is respectfully requested in light of the amendments and the remarks contained below.

Rejections Under 35 U.S.C. 103(a)

Claims 1-7 stand rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Henley et al, Bachrach et al, and Murphy et al. To the extent that the grounds of the rejections may be applied to the claims now pending in this application, they are respectfully traversed.

MPEP 2142 reads in part:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the

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reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

In connection with the third criteria, MPEP 2143.03 goes on the state:

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). "All words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

As amended, claim 1 recites using an infrared light to bond the single-crystal silicon layer and the amorphous silicon layer, and induce a hydro-cracking reaction in-situ to separate the silicon wafer and transparent substrate at the hydrogen ion layer. This feature is critical for the invention since infrared light can pass through the non-infrared absorbent glass substrate and amorphous silicon layer to cause chemical bonding of the infrared-absorbing single-crystal silicon and the amorphous silicon layer. When the heating reaches a certain temperature, a hydro-cracking reaction can be induced at the hydrogen ion layer. As such, the bonding and separating process can be completed in a single heating process by infrared light. See page 5, lines 22-30, and page 6, lines 1-6 of the application.

Applicant respectfully submits that none of the cited references teach or suggest the use of infrared light as recited in claim 1. As stated by the Examiner, Henley et al teach the use of a laser in controlled cleaving process. Henley et al, however, fail to teach or suggest the use of infrared light in bonding process. Likewise, Bachrach et al and Murphy et al are silent on the use of infrared light in a bonding process. Furthermore, the advantage achieved by the invention, i.e., in-situ bonding and separating, is unappreciated and unexpected from the teachings of cited references.

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It is therefore Applicant's belief that even when taken in combination, the prior art references relied upon by the Examiner do not teach or suggest all the limitations of claim 1. For at least this reason, the office action fails to establish a *prima facie* case of obviousness.

As it is Applicant's belief that a *prima facie* case of obviousness is not established in connection with claim 1, the Examiner's arguments in connection with the dependent claims are considered moot and are be addressed here. Withdrawal of the rejections of claims 1-3 and 5-7 is respectfully requested.

Conclusion

The Applicant believes that the application is now in condition for allowance and respectfully requests so.

Respectfully submitted,



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